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ABSTRACT

Nineteen geographically distributed secondary schools were linked with research and development resource groups for the purpose of implementing a 5-year learner-centered curriculum. The ultimate goal was to have each of the schools serve as a demonstration center for regionally continguous school districts. The changes attempted were the products of a carefully planned, systematic timetable with redesigned subsystems (instructional, administrative, and budgeting) developed by outside resource groups but necessitating full involvement of practitioners. Progress over the first three years and implications for facilitating future effective linkage between researchers and practitioners and resources at State and national levels are discussed. (Author)

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ES '70: A SYSTEMS APPROACH TO EDUCATIONAL REFORM

David S. Bushnell*

Three years ago the U.S. Office of Education initiated a cooperative venture linking local, state, and federal institutions with the intent of employing a systems approach to bring about needed improvement in the nation's high schools. Representatives of seventeen local school districts (selected on the basis of size, financial resources and geographical location), fourteen State Departments of Education, and USOE met in Fort Lauderdale, Florida, in May of 1967 to devise a program which would seek to reestablish the concept of the truly comprehensive high school.

Those participating in the meeting recognized the growing disparity between the traditional curriculum offerings and the learning needs of large segments of the American population. The central theme of the conference was to bridge the gap between the academic and vocational programs so that all high school students could develop basic learning skills, appropriate entry-level job skills, as well as meet the requirements for further study at higher educational levels. Horizontal and vertical articulation of subject matter was felt to be essential. Following agreement by the conferees upon a set of process and performance objectives, a board of directors was elected and a five year timetable and strategy for modifying the schools programs was worked out. The overall purpose would be to develop in each of the participating school districts a student oriented, individually

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tailored, effective and efficient secondary education program. The goals and ingredients of this planned change effort have been described elsewhere.[1] Today I would like to spend my time outlining the assumptions and strategies followed in implementing this cooperative program for change.

Basic Assumptions:

Three assumptions formed the basis for ES '70's change strategy:

1. The organizational structure of a school district, it was assumed, largely shapes the pattern of interaction of the individuals in it (thus ES '70's focus on the total district). Each of the subsystems making up that structure should be thought of as tied dynamically together. Past studies have dealt with these subsystems in isolation from one another with the result that fragmented changes yielded little in the way of significant improvements.[2] A systems approach offers the opportunity to cope with several important variables simultaneously.

2. It was agreed that school personnel should be actively involved in the planning, design and implementation of the research and development projects at each step of the way. However, primary responsibility for the design of the curriculum and instructional subsystems should fall outside the schools. The local schools should have primary responsibility for the integration and testing of these new materials and procedures once developed.

3. Tolerance for change within an organization can be increased through recognizing and rewarding participants for their contribution to the overall effort. Recognition and credit should be given in proportion to the effort expended.[3]

A Strategy for Change

In undertaking this systematic cooperative approach to school improvements, two broad levels of strategy were established. The first revolved about communicating the program objectives and strategies to those groups who would at some point in time become directly or indirectly involved. The first step in this process was that of informing and involving those groups directly concerned, e.g., the local superintendents, their district staff, and appropriate state personnel. During the summer and fall of 1967, Bob Morgan, then deputy director of the research division which I headed in USOE, and I attempted to contact each of the 14 Chief State School Officers in those states involved to get their backing and cooperation. Because of time pressures, other administrative responsibilities, and problems of pinpointing mutually acceptable dates, we successfully met with 11 of the 14. One that we missed, the former State Superintendent of Minnesota, turned out to be a significant oversight as he was later invited to serve on the Research Advisory Committee of the Bureau of Research. The local superintendents during this same span of time launched their own communication program within their own districts. Each selected and appointed a full-time coordinator to assist in this and other endeavors related to ES '70 (an Educational System for the '70's).

The second step called for presentations to a host of educational professional associations with whom the key participants identified. Involvement of these organizations would help to legitimize and reinforce those more directly involved. A.A.S.A., A.S.C.D,, A.P.G.A., N.A.S.S.P., A.V.A.,A.I.A.A., American Federation of Teachers, and the N.E.A. Board represent a few of the

groups before whom formal presentations were made.

The third step in this communication and climate building process was to establish some way of maintaining and enhancing inter-district communication. For that purpose, an outside management consultant firm was funded by USOE to establish information links between the participating schools, outside research resource groups, and the Federal and State agencies involved. Newsletters, monthly board meetings, quarterly conferences of all 17 (now 20)[4] local and state representatives, and periodic status reports are examples of some of the communication techniques employed.

The fourth and last step of this first level of general strategy was to gain the support of opinion leaders in the intellectual and political community through articles in appropriate journals, magazines, and popular media. The problem was to describe realistically the scope of the program and progress being made towards its goals without premature closure on the ingredients and procedures under development. One of the benefits we hoped to achieve through this strategy was to ensure a continuity of support and funding at the Federal level. This was not achieved. That story, however, is the subject of a book upon which I am now working and will hopefully have ready by this summer.

The second general strategy focused on the fabrication and delivery of individualized instructional materials and procedures, teacher training packages, and back-up administrative sub-systems. Parenthetically, one of the interesting hang-ups of the network was the expectation of some of the schools that they had only to wait patiently and passively for these prefabricated sub-systems to arrive before beginning the job of conversion. While I'm sure I could dazzle

you with the complexities of what was estimated to be a $300 million undertaking, let me concentrate my attention on two critical ingredients, timing and dollar resources.

With regard to timing, a number of supporting research and development activities, some under way before the launching of the consortium, had to be linked in a planned way with the network schools. Agreements had to be hammered out as to which schools would undertake the testing of which sub-systems. English teachers, for example, with experience in writing performance objectives had to be identified and tied into a tri-university grant for specifiying performance objectives in the English curriculum. Initially my own staff in the Bureau of Research struggled valiantly to fulfill that mission, but we soon had to turn to an outside consultant firm for help. Matching 20 local timetables with approximately 200 on-going, multi-year R & D efforts and then monitoring the progress of each, quickly became the job of a computer (I'll comment on the success of this phase of the effort shortly). The ES '70 Board of Directors, composed of six local superintendents, two Chief State School Officers, and an ex-officio USOE representative, accepted the responsibility for overall coordination. They met monthly during most of 1967 and '68 in order to insure that resource groups (university and other R & D groups) and user groups (the ES '70 schools) were tied together in a mutually beneficial manner.

Most of the funds in support of the program have come to date from federal agencies and private foundations with State Education Departments and local school districts contributing dollars or services "in kind". Approximately $2 million have been spent in direct support of the network between 1967 and 1970. These monies were used to defray the salary cost of the ES '70 coordinator

(or linking agent) on each of the school superintendent's staff and to pay for the services of the management consultant firm. The magnitude of expenditures for research and development projects has been much higher, but should not necessarily be interpreted as a direct investment in ES '70. As I mentioned, a number of related projects were started before the ES '70 network was formed. Directors of these research projects were urged to link their research with one or more of the ES '70 school districts for try-out of their particular product or program.

The network incorporated last summer as a non-profit organization and assessed each of its member districts a fee for the support of an Executive Secretary. The Board of Directors felt that this move would help to provide a more balanced partnership of the local, State, and Federal authorities involved, thereby offering a more realistic model for replication on a nationwide basis at a later stage. Removing the network from the direct stewardship of USOE has had the effect of strengthening the administrative role of the State and local authorities and, in turn, strengthening the commitment of these authorities. This policy is consistent with USOE's basic posture of non-intervention at local and State levels in matters concerned with the prescription of instructional methods or materials.

The Linkage Model as a Framework for Evaluation

Since much of the design, development and validation of the ES '70 program is still in a formative stage, a summative evaluation in terms of improved student performance or more efficient administrative procedures cannot be provided at this time. A formative evaluation, however, might be useful. Havelock,[5] in his recent report to the Office of Education, provides a useful framework for evaluation by synthesizing three popular dissemination and utilization theories which have dominated D & U research activities during the past couple

of decades. He incorporates the strongest features of each of these viewpoints and introduces the concept of "linkage" as a unifying and integrating concept

Starting with the focus on the "user" as a problem solver, in this instance the local ES '70 school district, the linkage model stresses that the user system must be meaningfully related to outside resources. "Meaningfully related" in Havelock's terms, means that the user system must have a reciprocal (and equal) relationship with the resource system. In effect, those representing the resource system must be able to simualte or recapitulate the need-reduction cycle of the user system. Only through interaction with and feedback from the user can the resource system learn whther or not its model of user behavior is correct. "Resource system" refers to those outside groups whom the Office of Education or other agencies funded to help the schools in the network achieve the objectives of ES '70.

Havelock identifies seven factors which he argues are important ingredients in ensuring the success of any D & U strategy. These are linkage, structure, openness, capacity, reward, proximity, and synergy. Four of these seven factors (underlined above) will be examined in terms of the strategy employed in ES '70.

Linkage (defined by Havelock as the number, variety, and mutuality of resource system - user system contacts) continues to be one of the major stumbling blocks of the ES '70 network. Because most contractors or grantees have been funded through an agency which operates independently of network schools, the director of an R & D project does not in a contractual sense have to concern himself with the needs or demands of the school districts. Involvement of school district personnel, attention to the practical constraints of the operating school situation, emphasis on two-way communication, and sensitivity to the local school's timetable for change have not been much in

evidence. As a non-profit corporation, the network will now be able to accept direct grants and let its own sub-contracts, thereby achieving more direct control of its vendors. Whether this will swing the pendulum too far in the other direction has yet to be seen.

One of the more notable achivements of the ES '70 program to date has been the development of an open and trusting relationship between not only the network schools but the state and federal agencies involved as well. The reciprocal and collaborative nature of this relationship developed out of the need for close and continued association in the design and implementation of the change strategy. The frequent formal and informal meetings and the shared achievements and adversity have helped to ensure a free flow of information and a sense of mutual trust. Until recently, the collaborative nature of this relationship has helped to reassure those within the network that dollar resources would be there when needed.

Havelock goes on to suggest that the role of the government and, in particular, the Office of Education, should be that of monitoring and helping to implement a macro-system model which facilitates linkage where barriers existed, adding components where there appear to be significant gaps, and discouraging the growth of devisive and maladaptive sub-systems.[6] Unfortunately, while many of us within the Bureau of Research aspired to carrying out those functions, we were unable to deliver on our commitments following a change in priorities and a cutting back on overall funds in FY 1969. While there is insufficient time to examine all of the underlying reasons behind this failure, part of it can be attributed to the emergence of the concept of a "new federalism" with States assuming primary responsibility for the distribution of federal funds, the inability to adequately staff my division to handle the work load,

and inflationary pressures which led to a drastic scaling-back of USOE's research budget.

Structure, defined as "the degree of systematic organization and coordination of the resource system, the user system, the dissemination-utilization strategy, and the coherence of the message," is perhaps the most important factor in an undertaking of this magnitude. Without the division of labor and close coordination between the partners in the enterprise, the overall undertaking would not have been feasible. Still to be demonstrated in any of the ES '70 schools is a workable computer-based instructional system (now under design at the New York Institute of Technology). It and other sub-systems have yet to be delivered and tested in each of the participating ES '70 schools. Less sophisticated (in terms of hardware), prototype systems are now being tried out at Bloomfield Hills, Michigan, Duluth, Minnesota, the John Adams High School in Portland, Oregon, and Nova School, Fort Lauderdale, Florida. Almost ready for trial runs are the systems currently under design in West Philadelphia, Houston, Breathitt County (Kentucky), Mineola (N.Y.), and San Mateo (California).

The overall synergy of the system, i.e., the number, variety, frquency and persistence of forces that can be mobilized to produce a knowledge utilization effect, continues to be a powerful ingredient in the ES '70 program. In spite of the failure of USOE to live up to the expectations of the network, 17 out of 20 of the school districts have elected to contribute a total $60,000 to the annual support of the program. A 50% turnover in the initial group of local superintendents has not brought any changes in membership. An innovative climate persists resulting in a proliferation of experimental approaches

to more effective involvement of the student in the learning process. Hopefully, this momentum will succeed in bringing some order out of the chaos now confronted by so many of our high schools virtually under attack by their impatient student bodies.

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1. Bushnell, David S., Rhodes, L., and Popham, W.J., "An Educational System for the '70's", Phi Delta Kappan, Dec. 1969, pp. 199-210.

2. Watson, Goodwin, "Resistance to Change," in Goodwin Watson,ed., Concepts for Social Change, published by Cooperative Project for Educational Development (COPED), N.T.L., N.E.A., Washington, D.C., 1967, pp. 10-23.

3. Bennis, Warren G., "Post-Bureaucratic Leadership," TRANS-action, July/August 1968, pg. 46.

4. The schools presently making up the ES '70 network: Atlanta, Ga.; Baltimore, Md.; Bloomfield Hills, Mich.; Boulder, Colo.; Breathitt County Ky.; Broward County (nova), Fla.; Chicago (Archdiocese School Board), III.; Duluth, Minn.; Haddonfield, New Jersey; Houston, Tex.; Mamaroneck, N.Y.; Mineola, N.Y.; Monroe, Mich.; Philadelphia, Penn.; Portland, Oregon; Quincy, Mass.; San Antonio, Tex.; San Mateo, Calif.; Santa Fe (Institute of American Indian Arts). N.M.; and Willingboro, N.J.

5. In addition, the National Science Foundation, the Navy Department, the National Endowment of the Arts, State ESEA Title III programs, the JDR Third Fund, the Aerospace Education Foundation, and the Rockefeller Foundation have all provided support through the funding of specific projects in selected ES '70 school districts. Because of this diversity of support at local, State and Federal levels, a full accounting of the total dollars invested will not be available until the completion of the project in 1973.

6. Havelock, Ronald G., "A Comparative Study of the Literature on the Dissemination and Utilization of Scientific Knowledge," Final Report No. 7-0028, Bureau of Research USOE, July, 1969, pgs. 11-20 to 11-30.

7. Ibid, pgs. 11-17 to 11-19.